

Process for treating blood with polyimide carriers

Description of Technology: The present invention relates to a process for treating blood. The process involves separating the blood into plasma and cellular components. The plasma component is passed through a column containing a polyimide particulate carrier. The polyimide carrier contains immobilized proteins, such as protein A, bonded to its surface. The polyimide carrier can be used for removing or modifying a biochemically active substance in the blood plasma.

Patent Listing:

1. **US Patent No. 5,356,374,** Issued on October 18, 1994, "Process for treating blood with polyimide carriers."

http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HTTOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=5356374.PN.&OS=PN/5356374&RS=PN/5356374

Market Potential: Biochemically active substances, such as enzymes, co-enzymes, enzyme inhibitors, hormones, antigens, antibodies, proteins, DNA, RNA etc., fixed on carriers such as cellulose, agarose, synthetic polymers, etc., are used in the separation, purification and transformation of other biochemically active substances.

Polyimides have found extensive use in the electronics arena where they have proven useful in forming dielectric films as protective coatings on electronic and electrical devices, i.e. semiconductors, high temperature solder masks and bonding multilayer circuits. It is known in the polymer art to make all-aromatic polyimides by the condensation polymerization of dianhydrides and diamines to form polyamic acids which are then dehydrated to the polyimides (Edwards U.S. Pat. No. 3,179,634). Fryd U.S. Pat. No. 4,588,804 discloses polyimide compositions soluble in aprotic solvents. Gesslaer DE patent 3,523,615 discloses the use of polyimide coated materials, the surface of which are coated with gamma globulin. Wynberg WO patent 86/03840 discloses the use of polyimides (made from pyromellitic acid and bis(4-aminophenyl) oxide as immunoreagent carriers in thermochemiluminescence immunoassays.

Benefits:

• The polyimide can remove or modify biochemically active substances in blood plasma.

Applications:

Treating blood and modifying biochemically active substances in the blood plasma.